

1. Method for distributing a data-traffic load on a communication network (KN1) with an extensive
 5 range of network nodes (NK1..NK4, ZNK) connected via link lines (L1..L6), where;

a) a data-traffic-monitoring system (ZNK) ascertains a current data-transfer-loading value (A1..A4) for the respective link line (L1..L6) and/or
 10 the respective network node (NK1..NK4, ZNK);

b) based on the data-transfer-loading values (A1..A4) that have been ascertained, the data-traffic-monitoring system (ZNK) ascertains distribution information (V1..V4) for the respective network node
 15 (NK1..NK4) and sends it to the node concerned;

c) based on the distribution information (V1..V4) that has been received, this network node (NK1..NK4) generates a allocation model, which is used to divide the address information (QA) of data packets (DP) into separate address classes (0..7), each of
 20 which is assigned to one of a number of alternative routes (LW1, LW2, LW3) leading to a particular destination network node (NK4);

d) when this network node (NK1..NK4) receives a data packet (DP) addressed to this destination network node (NK4), it ascertains the address class (0..7) from its address information (QA) and sends the data packet (DP) via the route (LW1, LW2, LW3) assigned to the address class (0..7) that has been ascertained.
 25

30 2. Method as claimed in Claim 1, characterized in that:
 the data-transfer-loading values (A1..A4) are ascertained using a routing protocol (OSPF) in the communication network (KN1).

35 3. Method as claimed in Claim 1 or 2, characterized in that:
 at least one network node (NK1..NK4) sends link-line-specific and/or route-specific and/or

connection-specific loading information (A1..A4), relating to the outgoing link lines (L1..L6) and/or routes (LW1, LW2, LW3) and/or connections from this network node (NK1..NK4), to the data-traffic-monitoring system (ZNK) to allow data-transfer-loading values (A1..A4) to be ascertained.

4. Method as claimed in one of the above claims, characterized in that:

the data packets (DP) to be transferred have different transfer priorities, and that:

at least one network node (NK1..NK4) sends transfer-priority-specific loading information (A1..A4), to the data-traffic-monitoring system (ZNK) to allow data-transfer-loading values (A1..A4) to be ascertained.

5. Method as claimed in Claim 4, characterized in that:

transfer-priority-specific distribution information (V1..V4) is ascertained by the data-traffic-monitoring system (ZNK) and sent to the respective network node (NK1..NK4), which distributes data packets (DP) of a particular transfer priority in accordance with the distribution information (V1..V4) defined for this transfer priority.

6. Method as claimed in one of the above claims, characterized in that: destination-network-node-specific distribution information (V1..V4) is determined for a particular network node (NK1..NK4) and sent to that network node (NK1..NK4).

7. Method as claimed in one of the above claims, characterized in that: in order to determine distribution information (V1..V4), previously ascertained data-transfer-loading values (A1..A4) and/or previously ascertained distribution information (V1..V4) are extrapolated relative to time.

8. Method as claimed in one of the above claims,

characterized in that:

the distribution information (V1..V4) for a network node (NK1..NK4) includes quota details that specify, for each route in a group of alternative routes (LW1, LW2, LW3) leading from this node to a destination network node (NK4), what proportion of the data packets (DP) addressed to this destination network node (NK4) should be transferred over the route concerned (LW1, LW2, LW3).

9. Method as claimed in Claim 8, characterized in that:

the network node (NK1..NK4) uses a random-number generator, weighted in accordance with the quota details, to assign a data packet (DP) addressed to the destination network node (NK4) to one of the alternative routes (LW1, LW2, LW3) for onward transfer.

10. Method as claimed in one of the above claims, characterized in that:

the address information (QA) includes source address information that identifies the sender of the data packet (DP) concerned.

11. Method as claimed in one of the above claims, characterized in that:

the allocation of address classes takes place on the basis of stored address information from data packets transmitted previously.

12. Method as claimed in one of the above claims, characterized in that:

based on data-transfer-loading values (A1..A4) that have been ascertained, the data-traffic-monitoring system (ZNK) determines a new, alternative route for a network node (NK1..NK4), and sends route information describing the new route to this network node (NK1..NK4).

13. Communication network (KN1) with an extensive range of network nodes (NK1..NK4, ZNK) connected via link lines (L1..L6), and with

- 19 -

a) a data-traffic-monitoring system (ZNK), which includes

- an information-capture facility (NB, PB) to ascertain the current data-transfer-loading value (A1..A4) for the link line (L1..L6) and/or network node (NK1..NK4, ZNK) concerned,

- an analysis facility (PB) to determine distribution information (V1..V4) for a particular network node (KN1..KN4), based on the data-transfer-loading values (A1..A4) that have been ascertained, and

- a transmission facility (NB) to send the distribution information (V1..V4) to the relevant network nodes (NK1..NK4), and with

b) network nodes (NK1..NK4), which include

- an allocation facility (TG) that creates a allocation model based on distribution information (V1..V4) that has been sent, and divides the address information (QA) of data packets (DP) into separate address classes (0..7), each of which is assigned to one of a number of alternative routes (LW1, LW2, LW3) leading to a particular destination network node (NK4), and

- a data-packet-distribution facility (HR, NB1) that ascertains the address class (0..7) of the address information (QA) of a data packet (DP) to be transferred, and transfers the data packet (DP) via the route (LW1, LW2, LW3) assigned to this address class (0..7).